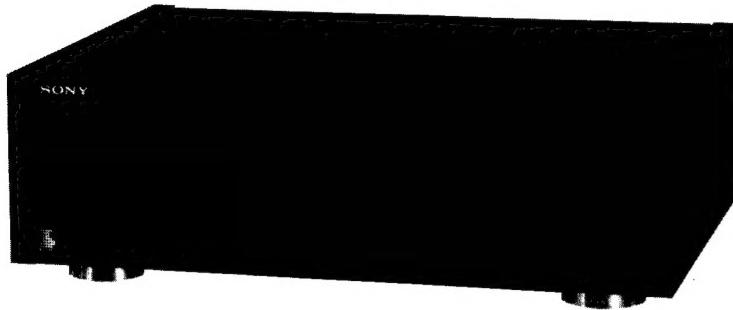


# TA-N55ES

## SERVICE MANUAL

US Model  
Canadian Model  
AEP Model  
UK Model



### SPECIFICATIONS

#### AUDIO POWER SPECIFICATIONS

##### POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 4 ohm loads, both channels driven, from 20 - 20,000 Hz; rated 150 watts per channel minimum RMS power, with no more than 0.01 % total harmonic distortion from 250 milliwatts to rated output.

With 8 ohm loads, both channels driven, from 20 - 20,000 Hz; rated 110 watts per channel minimum RMS power, with no more than 0.05 % total harmonic distortion from 250 miliwatts to rated output.

#### Other specifications

Item	Condition	Model except for North Europe	Model for North Europe
Continuous RMS power output(both channels driven simultaneously)	4 ohms 20 Hz - 20 kHz, THD 0.01 %	150 W + 150 W (DIN: 160 W + 160 W)	—
	6 ohms 20 Hz - 20 kHz, THD 0.03 %	125 W + 125 W (DIN: 135 W + 135 W)	100 W + 100 W (DIN: 120 W + 120 W)
	8 ohms 20 Hz - 20 kHz, THD 0.05 %	110 W + 110 W (DIN: 120 W + 120 W)	80 W + 80 W (DIN: 110 W + 110 W)
	8 ohms monaural, THD 0.05 %	300 W (DIN: 350 W)	—
	12 ohms monaural, THD 0.05 %	—	200 W (DIN: 235 W)

— continued on next page —

STEREO POWER AMPLIFIER  
**SONY**®



Dynamic power	1 ohm stereo (monaural)	450 W (-)	450 W (-)
	2 ohms stereo (monaural)	400 W (750 W)	325 W (625 W)
	4 ohms stereo (monaural)	290 W (680 W)	220 W (450 W)
	8 ohms stereo (monaural)	150 W (500 W)	125 W (370 W)
Power bandwidth (IHF)	4 ohms, THD 0.05 %	5 Hz - 50 kHz at 75W	—
	8 ohms, THD 0.05 %	5 Hz - 50 kHz at 55 W	—
Dynamic headroom ('78 IHF)	4 ohms	2.8 dB	—
	8 ohms	1.8 dB	—
Total harmonic distortion	4 ohms, at 10 watt output	0.008 %	—
	6 ohms, at 10 watt output	0.006 %	—
	8 ohms, at 10 watt output	0.004 %	—
Intermodulation (IM) distortion 60 Hz:7 kHz = 4:1	4 ohms, at rated output	0.008%	—
	6 ohms, at rated output	0.006%	—
	8 ohms, at rated output	0.004%	—
Damping factor	8 ohms, 1 kHz	100	—
Slew rate	—	120 V/μsec, 250 V/μsec (inside)	—
Residual noise	network A	Less than 90 μV	—
Frequency response	INPUT	5 Hz - 200 kHz $\pm 0$ dB $-3$ dB	5 Hz - 100 kHz $\pm 0$ dB $-3$ dB
Input sensitivity	INPUT	180 mV, 20 kohms	—
S/N (network) '78 IHF	INPUT	120 dB (A)	—

**General**

System Super legato linear, purecomplementary SEPP power amplifier, powerful power supply

## Power requirements

US, Canadian model:

120 V AC, 60 Hz

AEP, WG model:

220 V AC, 50/60 Hz

UK model:

240 V AC, 50 Hz

## Power consumption

US model: 280 watts

Canadian model: 580 VA

UK model: 760 watts

AEP model: 190 watts

WG model: 310 watts

## Dimensions

UK model:

Approx. 430 x 150 x 365 mm (w/h/d)

( $16\frac{7}{8}$  x  $5\frac{7}{8}$  x  $14\frac{3}{8}$  inches)

Except for UK model:

Approx. 467 x 150 x 365 mm (w/h/d)

( $18\frac{3}{8}$  x  $5\frac{7}{8}$  x  $14\frac{3}{8}$  inches)

## Weight

UK model:

Approx. 11.2 kg (24 lb. 12 oz.), net

Except for UK model:

Approx. 12.2 kg (26 lb. 14 oz.), net

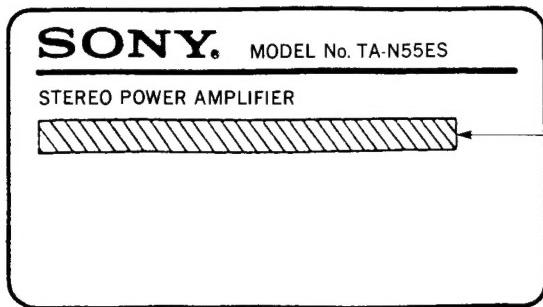
## Supplied accessories

Screws (8) (except for UK model)

Design and specifications subject to change without notice.

**MODEL IDENTIFICATION**

— Specification Label —



US model: AC 120V 60Hz	280W
Canadian model: AC 120V 60Hz	580VA
AEP, WG (West Germany) model: AC 220V~50/60Hz	
UK model: AC 240V~50/60Hz	

## SECTION 1 GENERAL

### SERVICING NOTES

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

### SAFETY CHECK-OUT

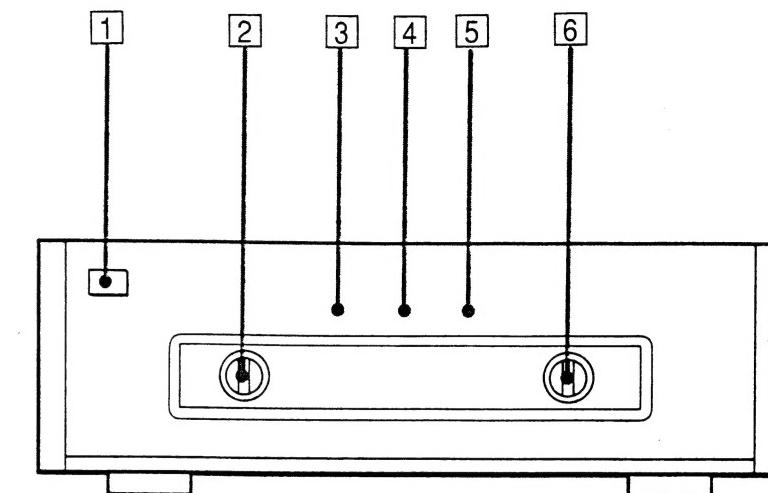
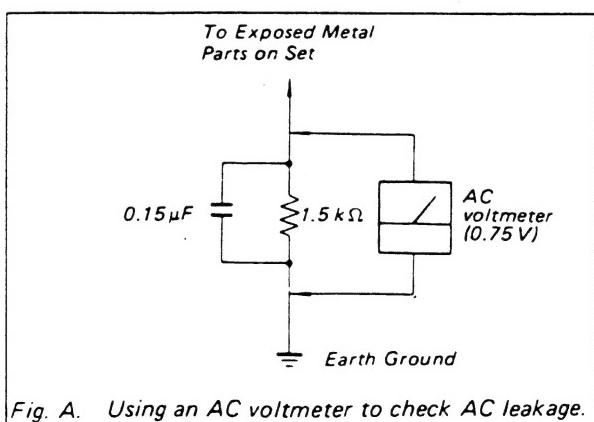
After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

#### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



**[1] POWER switch**

**[2] SPEAKERS selector**

Selects speaker system A, B or both (A+B). For headphone monitoring on the connected preamplifier, set the selector to OFF.

**[3] PROTECTION indicator**

Lights up for approximately 4 seconds immediately after turning on the unit. This indicates that the built-in muting circuit is activated. In normal operating conditions, this does not light. If it lights up (speaker sound is not heard) while operating, an abnormality has occurred. In this case, disconnect the AC power cord and check the connected components and speaker systems.

**[4] STEREO indicator**

Lights up when OPERATION is set to STEREO.

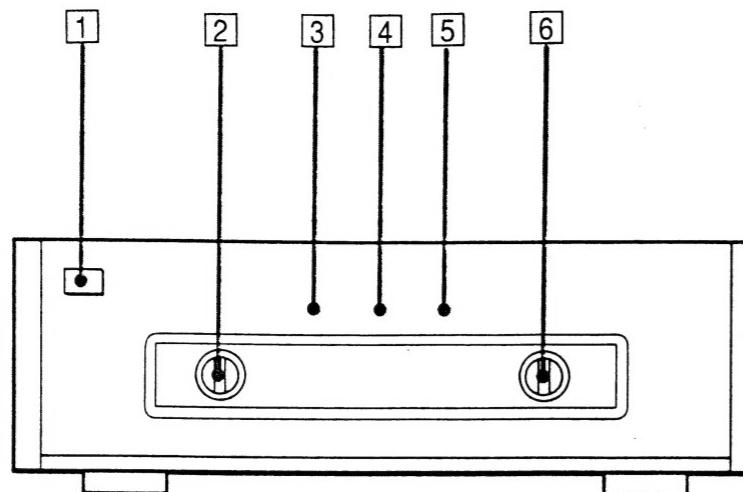
**[5] MONO indicator**

Lights up when OPERATION is set to MONO.

**[6] ATTENUATOR**

Control input signal sound level from the preamplifier. Normally, set it to the click-in center position.

## SECTION 1 GENERAL



### **[1] POWER switch**

### **[2] SPEAKERS selector**

Selects speaker system A, B or both (A+B).  
For headphone monitoring on the connected preamplifier, set the selector to OFF.

### **[3] PROTECTION indicator**

Lights up for approximately 4 seconds immediately after turning on the unit. This indicates that the built-in muting circuit is activated.

In normal operating conditions, this does not light. If it lights up (speaker sound is not heard) while operating, an abnormality has occurred. In this case, disconnect the AC power cord and check the connected components and speaker systems.

### **[4] STEREO indicator**

Lights up when OPERATION is set to STEREO.

### **[5] MONO indicator**

Lights up when OPERATION is set to MONO.

### **[6] ATTENUATOR**

Control input signal sound level from the preamplifier.  
Normally, set it to the click-in center position.

## SECTION 2 ELECTRICAL ADJUSTMENTS

### PRECAUTIONS

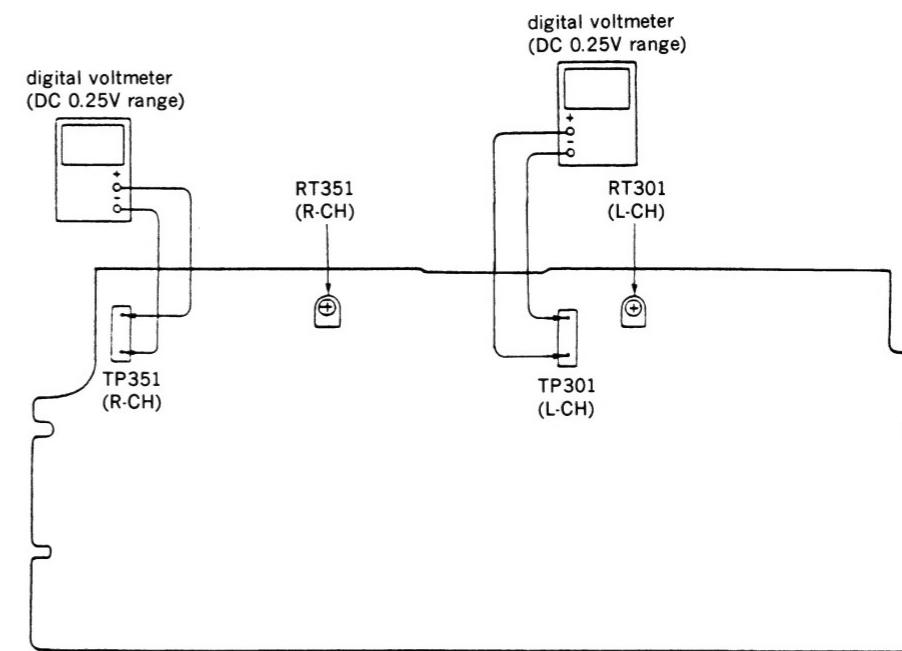
1. Adjust the idling after tuning the unit on for about 10-15 minutes, giving it time to warm up.
2. Always make sure to adjust the idling when repairing the power amp section or when replacing any parts.

### [IDLING ADJUSTMENT]

#### Procedure :

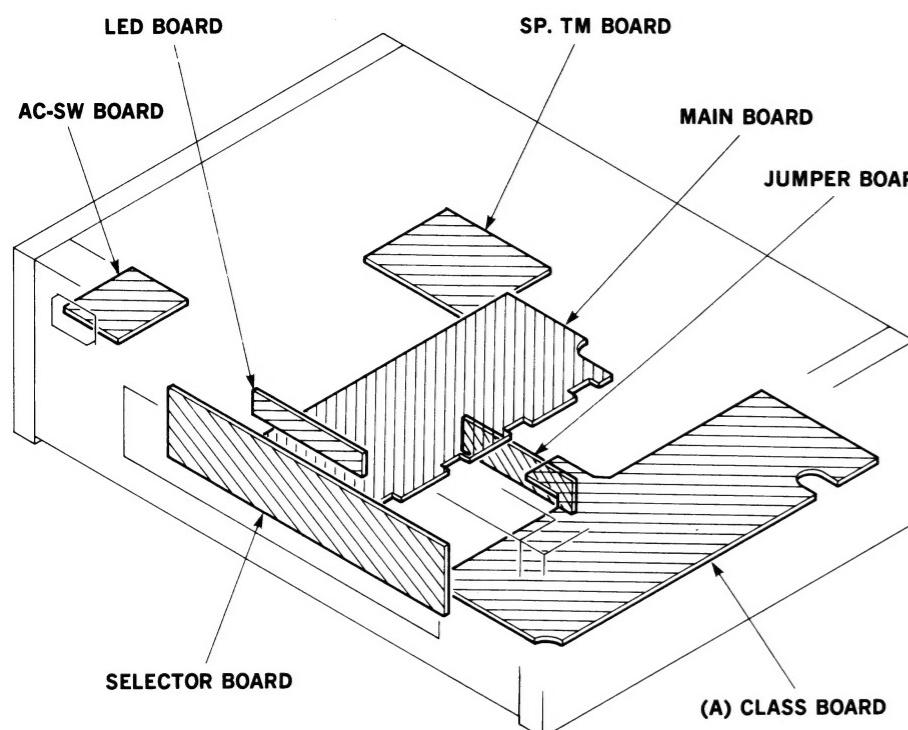
Set the ATTENUATOR control as low as possible and adjust RT301 (L-CH) and RT351 (R-CH) so that the voltmeter reads 7mV at TP301 (L-CH) and TP351 (R-CH).

#### Adjustment Location : power board



### SECTION 3 DIAGRAMS

#### 3-1. CIRCUIT BOARDS LOCATION



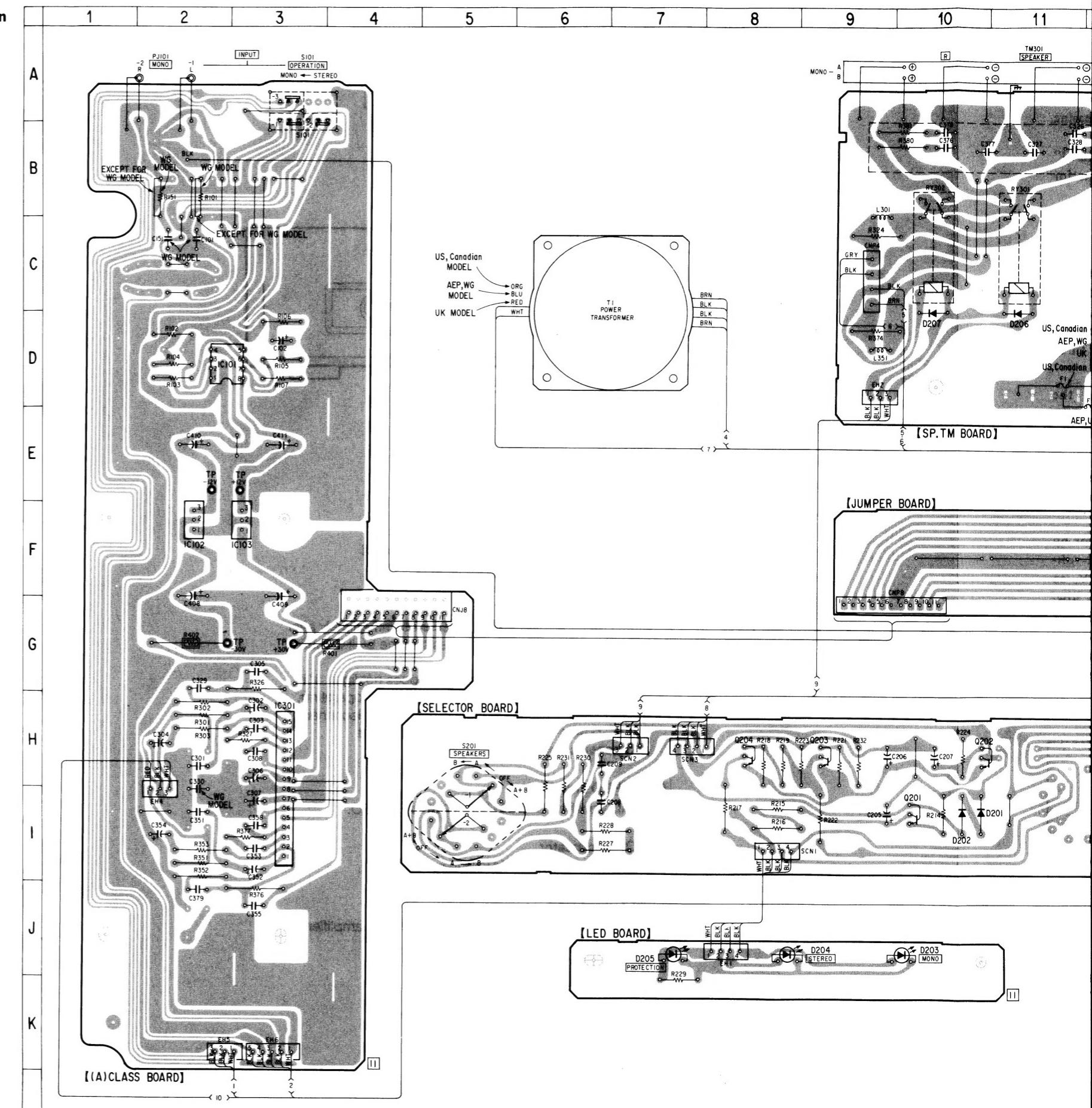
#### • Semiconductor Location

Ref. No.	Location
D201	I-10
D202	I-10
D203	J-10
D204	J-8
D205	J-7
D206	C-11
D207	C-10
D301	E-18
D302	F-19
D303	G-19
D304	G-18
D305	C-18
D306	C-18
D307	G-18
D308	G-19
D309	G-18
D310	G-18
D311	H-18
D312	J-16
D313	J-16
D314	I-15
D362	C-16
D363	C-16
D364	D-15
IC101	D-2
IC102	F-2
IC103	F-3
IC301	H-3
IC302	I-18
Q201	I-10
Q202	H-10
Q203	H-9
Q204	H-8
Q301	I-15
Q302	I-16
Q303	I-16
Q304	J-15
Q305	H-15
Q306	J-16
Q351	D-15
Q352	D-16
Q353	E-16
Q354	C-15
Q355	E-15
Q356	C-16

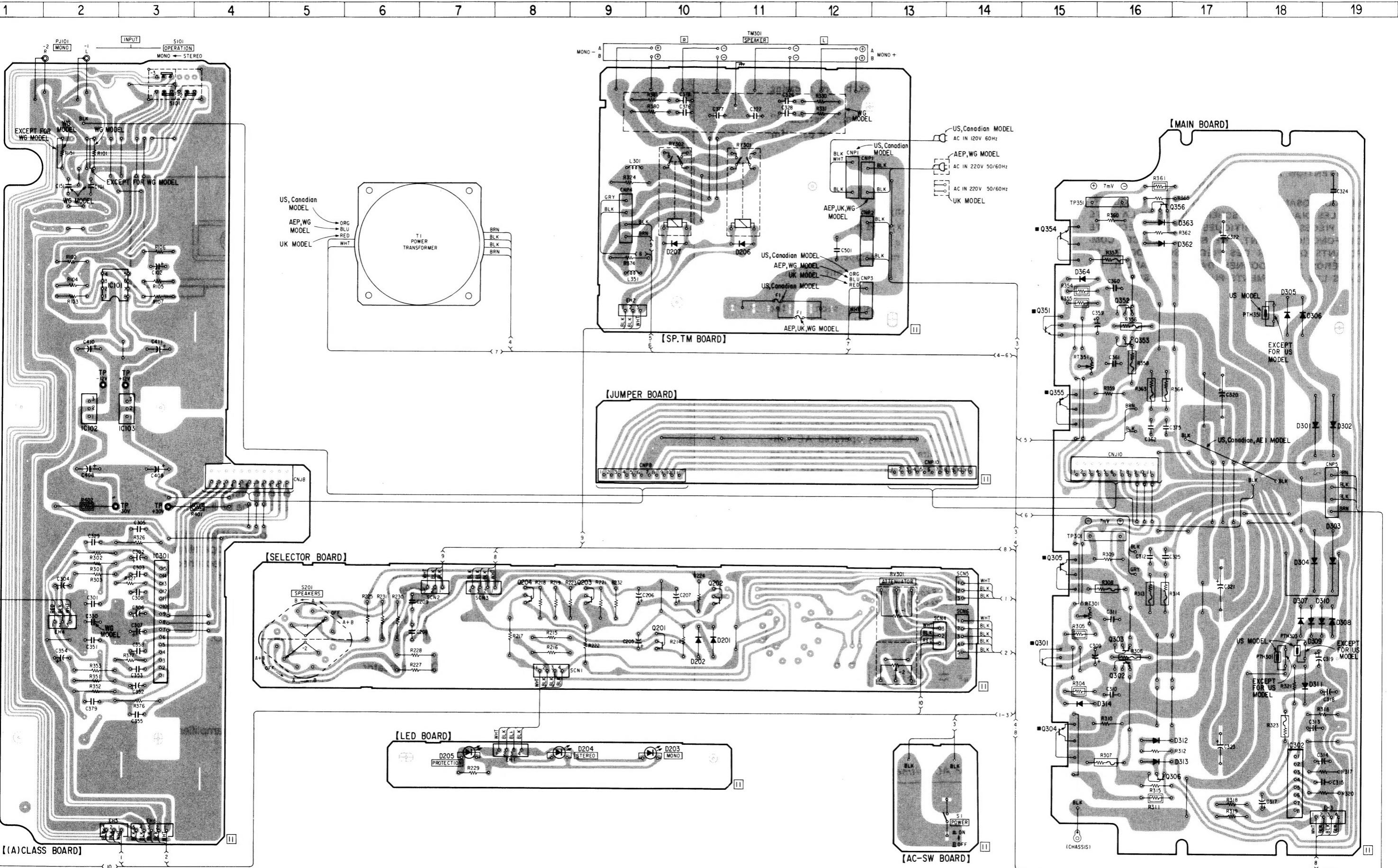
#### Note:

- ○ : parts extracted from the component side.
- ■ : parts mounted on the conductor side.

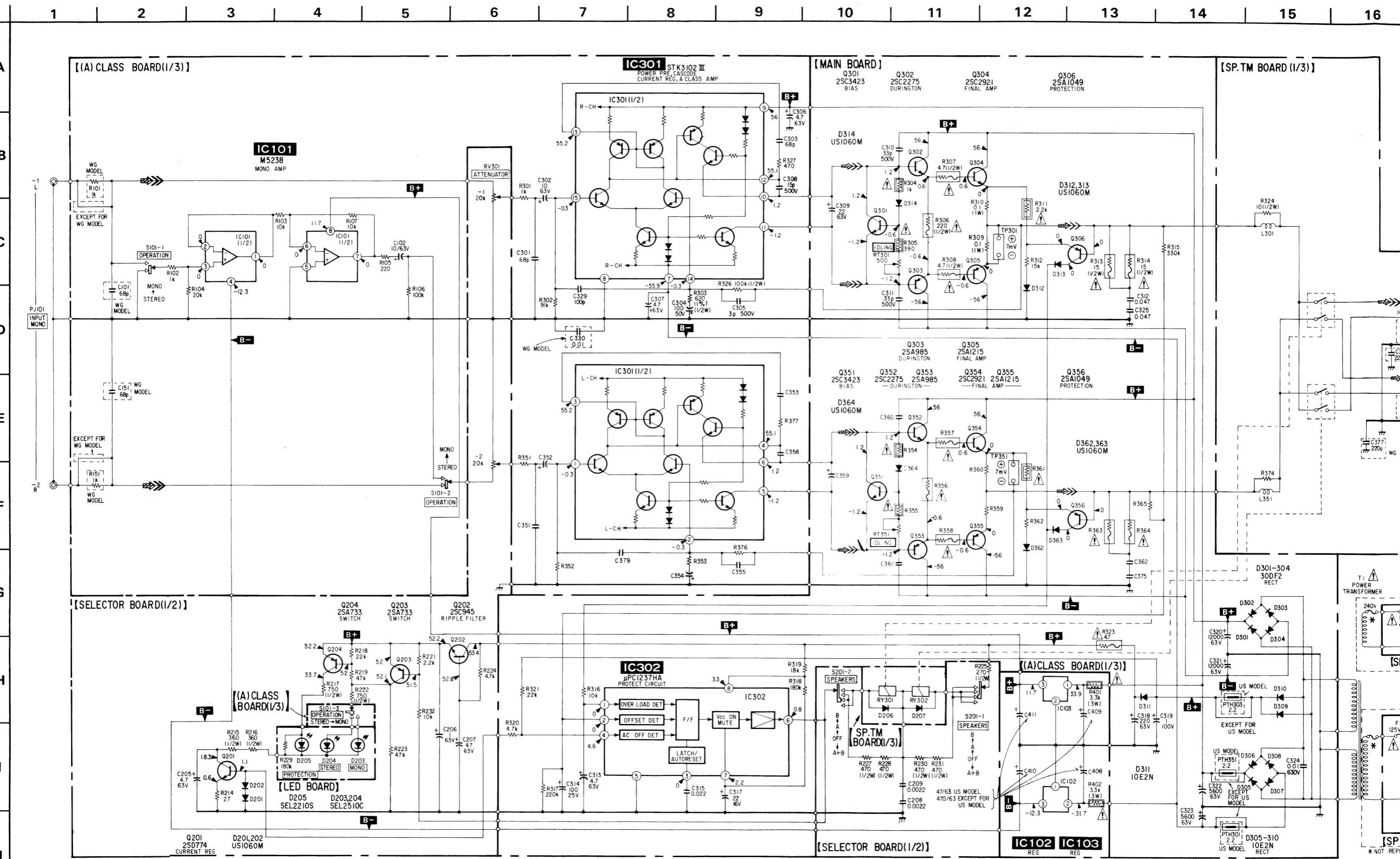
#### 3-2. PRINTED WIRING BOARDS

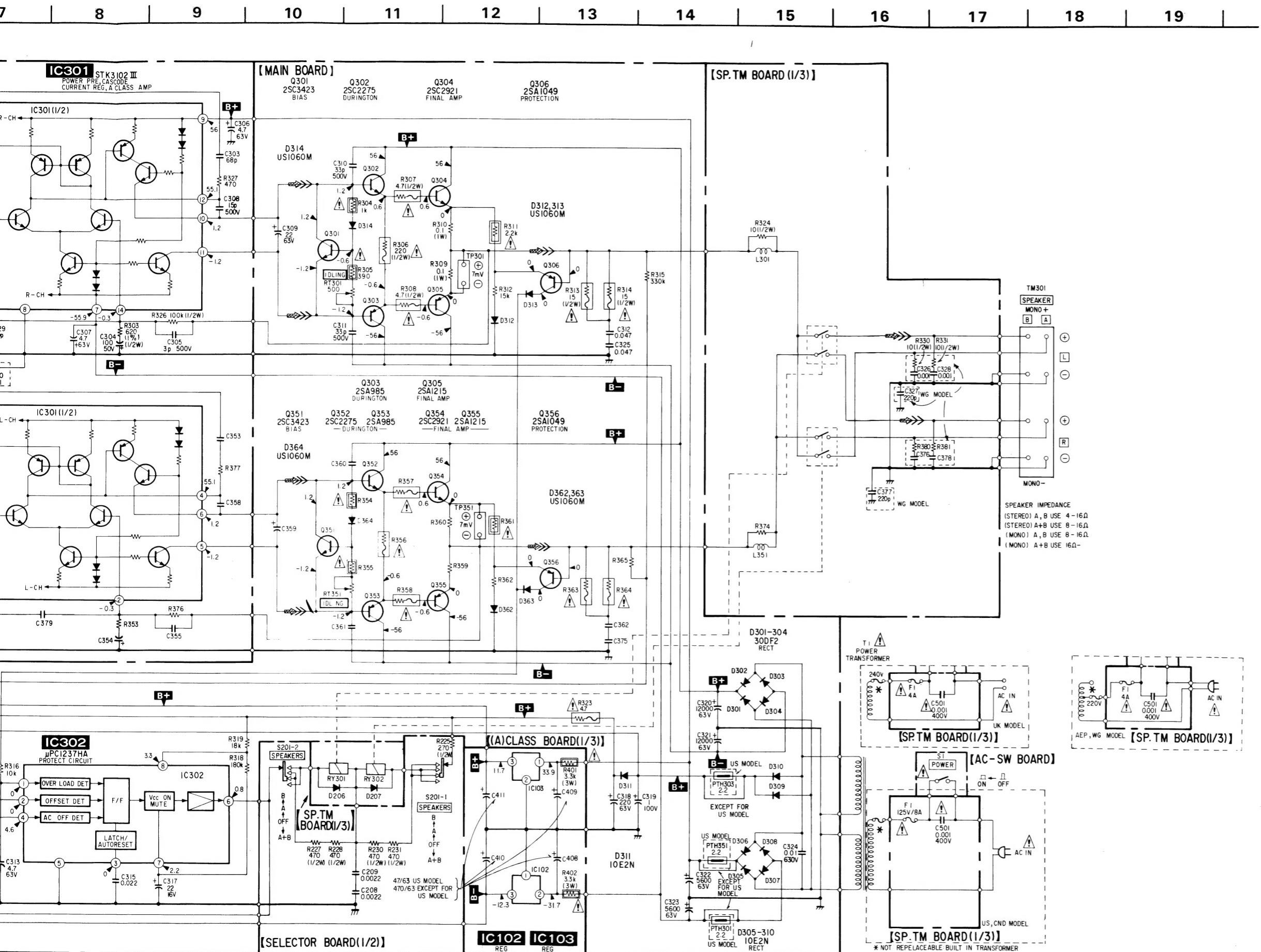


## 3-2. PRINTED WIRING BOARDS



### 3-3. SCHEMATIC DIAGRAMS



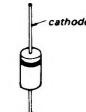
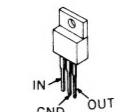


## • SEMICONDUCTOR LEAD LAYOUTS

M5F78M12

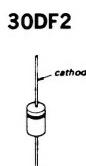
2SA985A-P  
2SC2275-P

10E2N



M5F79M12

30DF2



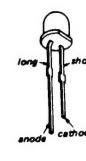
2SC3423-O

SEL2210S



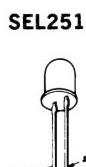
2SA1049

2SC945-P



2SA1175-HFE

2SD774-34

2SA1215M-O  
2SC2921M-O

1SS120



## Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from 300.
- $\text{---}$ : nonflammable resistor.
- $\text{---}$ : fusible resistor.

## Note:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Note:  
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

- $\square$ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: PHONO
- Voltages are taken with a VOM (Input Impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\Rightarrow$ : PHONO

WG: West Germany  
CND: Canadian

## SECTION 4 EXPLODED VIEWS

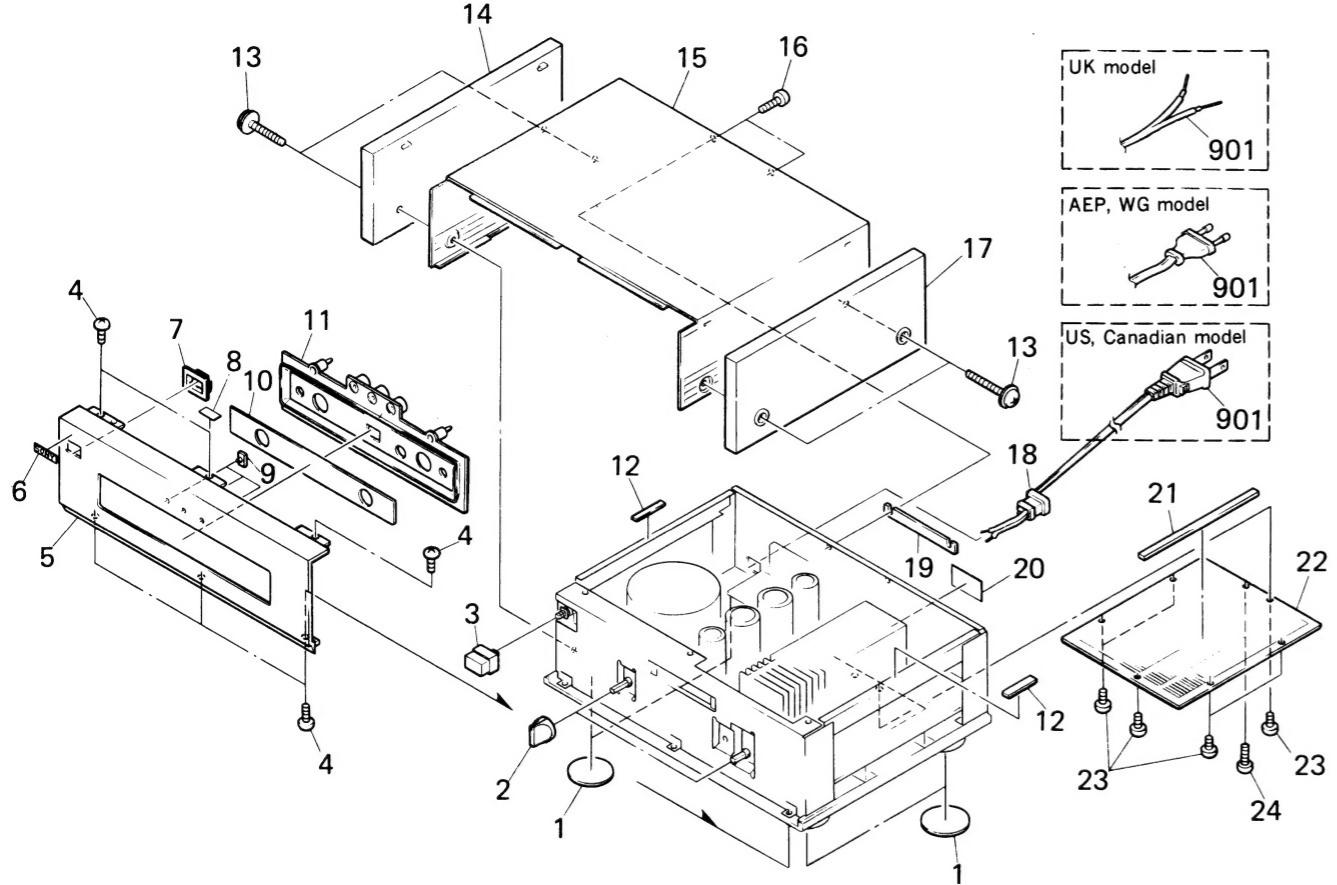
**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

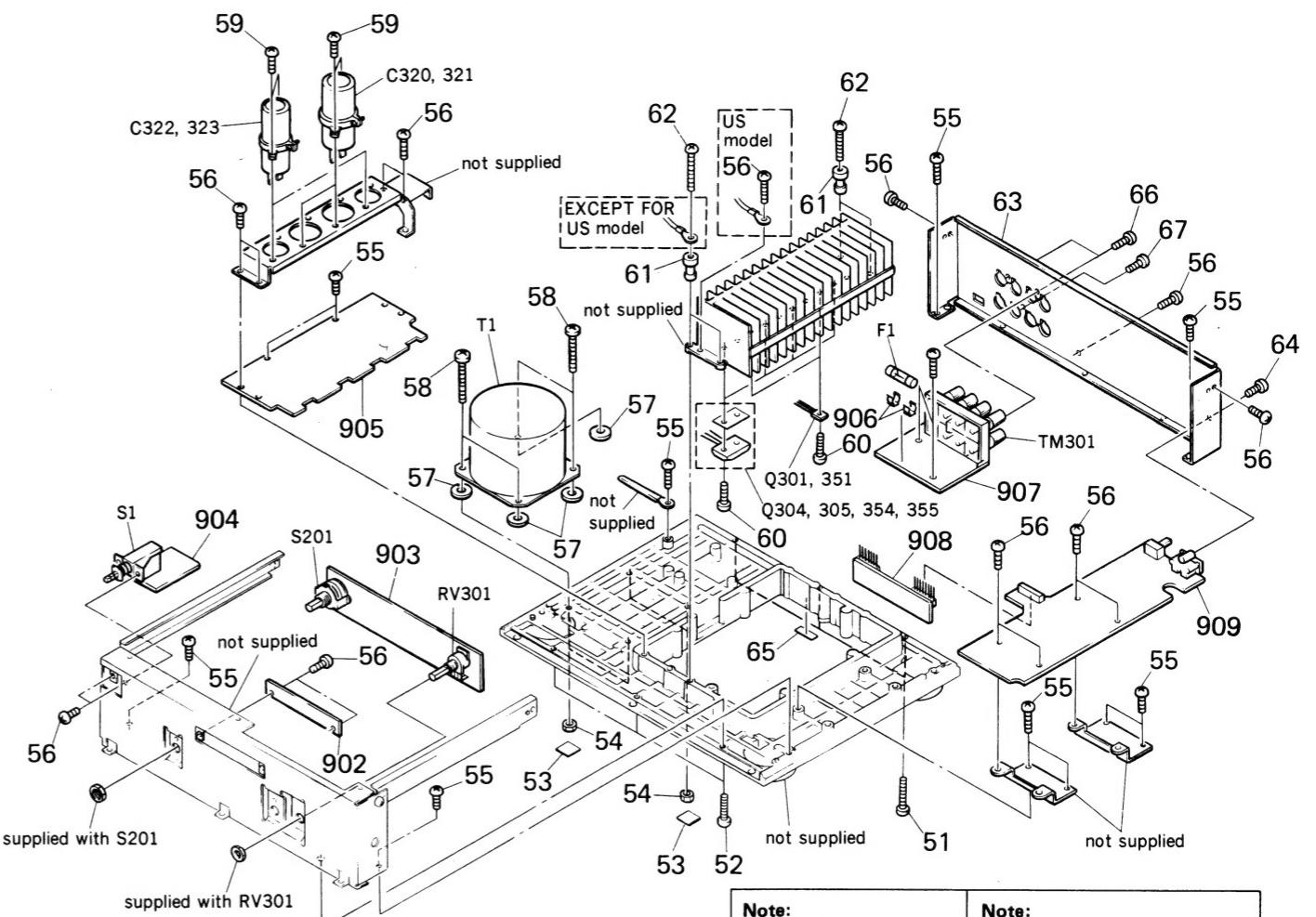
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color                      Parts' Color

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.  
Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

WG: West Germany

**4-1. CABINET SECTION**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
1	*4-923-850-01	FOOT (DIA. 46)		16	7-685-873-09	SCREW +BVTT 3X10 (S)	
2	4-916-745-01	KNOB (DIA.21)		17	X-4933-002-1	(US, Canadian, AEP)...PLATE (RIGHT) ASSY, SIDE	
3	4-917-460-01	KNOB, POWER		17	X-4933-004-1	(WG)...PLATE (RIGHT) ASSY, SIDE	
4	7-682-547-09	SCREW +BVTT 3X6 (S)		18	*3-703-244-00	BUSHING (2104), CORD	
5	4-933-018-11	(US, Canadian)...PANEL, FRONT		19	*4-929-232-01	SPACER	
5	4-933-018-21	(AEP, UK, WG)...PANEL, FRONT		20	*4-933-006-01	(US)...LABEL, MODEL NUMBER (U)	
6	4-908-884-01	EMBLEM, SONY		20	*4-933-007-01	(Canadian)...LABEL, MODEL NUMBER (CA)	
7	4-908-044-11	ESCUtCHEON, POWER KNOB		20	*4-933-008-01	(AE1)...LABEL, MODEL NUMBER (AE1)	
8	*3-846-067-21	(UK)...SPACER (C)		20	*4-933-009-01	(AE2)...LABEL, MODEL NUMBER (AE2)	
9	4-884-612-11	INDICATOR, EJECT		20	*4-933-010-01	(WG)...LABEL, MODEL NUMBER (AE4)	
10	4-933-013-11	PLATE (AL), ORNAMENTAL		20	*4-933-011-01	(UK)...LABEL, MODEL NUMBER (UK)	
11	4-933-014-01	ESCUtCHEON		21	*4-916-782-21	DAMPER	
12	*2-527-517-00	(UK)...CUSHION, CASE RETAINER		22	*4-916-732-01	BOARD, BOTTOM	
13	4-885-979-21	(US, Canadian, AEP, WG)...SCREW (4X28)		23	7-685-647-79	SCREW +BVTP 3X10 TYPE2 SLIT	
13	4-889-321-11	(UK)...SCREW		24	7-685-874-09	SCREW +BVTT 3X12 (S)	
14	X-4933-001-1	(US, Canadian, AEP)...PLATE (LEFT) ASSY, SIDE		901	▲ 1-557-577-11	(US, Canadian)...CORD, POWER	
14	X-4933-003-1	(WG)...PLATE (LEFT) ASSY, SIDE		901	▲ 1-574-804-11	(UK)...CORD, POWER	
15	4-933-020-01	(EXCEPT FOR AE2)...CASE		901	▲ 1-574-805-11	(AEP, WG)...CORD, POWER	
15	4-933-020-11	(AE2)...CASE		904	*1-631-870-11	PC BOARD, AC-SW	

**4-2. SHASSIS SECTION**

**Note:**  
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

**Note:**  
Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
51	7-685-876-09	SCREW +BVTT 3X16 (S)		905	* A-4333-769-A (US)...MOUNTED PCB, MAIN (B)		C308 1-10
52	7-685-873-09	SCREW +BVTT 3X10 (S)		905	* A-4333-770-A (Canadian)...MOUNTED PCB, MAIN (B)		C309 1-12
53	*4-929-266-01	CUSHION		905	* A-4333-771-A (WG)...MOUNTED PCB, MAIN (B)		C310 1-10
54	7-684-024-04	N 4, TYPE 2		905	* A-4333-772-A (UK)...MOUNTED PCB, MAIN (B)		C311 1-10
55	7-685-647-79	SCREW +BVTP 3X10 TYPE2 SLIT		905	* A-4333-783-A (AEP)...MOUNTED PCB, MAIN (B)		C312 1-13
56	7-682-547-09	SCREW +BVTT 3X6 (S)		906	* 1-533-183-11 (AEP, UK, WG)...HOLDER, FUSE		
57	4-885-984-21	WASHER		906	* 1-533-185-11 (US, Canadian)...HOLDER, FUSE		
58	7-682-566-09	SCREW +B 4X20		907	* 1-631-658-11 (PC BOARD, SP.TM		C313 1-12
59	7-685-872-09	SCREW +BVTT 3X8 (S)		908	* 1-631-656-11 PC BOARD, JUMPER		C314 1-12
60	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3		909	* 1-631-655-11 PC BOARD, (A) CLASS		C315 1-13
61	4-933-025-01	(UK)...COLLAR		C320	1-125-568-11 ELECT	1200MF 20% 63V	C316 1-12
62	7-685-152-19	(US)...SCREW +P 3X25 TYPE2 SLIT		C321	1-125-568-11 ELECT	1200MF 20% 63V	C317 1-12
62	7-685-647-79	(EXCEPT FOR US)...SCREW +BVTP 3X10 TYPE 2 SLIT		C322	1-125-569-11 ELECT	5600MF 20% 63V	C318 1-12
63	*4-933-015-01	(EXCEPT FOR AE2)...PANEL, BACK		C323	1-125-569-11 ELECT	5600MF 20% 63V	C319 1-12
63	*4-933-015-11	(AE2)...PANEL, BACK		F1	▲ 1-532-350-00 (AEP, UK, WG)...FUSE, TIME-LAG T4A		C320 1-12
64	7-621-849-00	SCREW, TAPPING		F1	▲ 1-532-510-00 (US, Canadian)...FUSE, GLASS TUBE 8A		C321 1-12
65	*4-703-079-21	(UK)...LABEL, CAUTION (BACK)		S1	▲ 1-554-538-00 SWITCH, PUSH (AC POWER)(1 KEY)		C322 1-12
66	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S		T1	▲ 1-449-787-11 (AEP, WG)...TRANSFORMER, POWER		C323 1-12
67	7-621-849-00	(WG)...SCREW, TAPPING		T1	▲ 1-449-789-11 (UK)...TRANSFORMER, POWER		C324 1-13
67	7-685-647-79	(EXCEPT FOR WG)...SCREW +BVTP 3X10 TYPE 2 N-S		T1	▲ 1-449-790-11 (US, Canadian)...TRANSFORMER, POWER		C325 1-13
902	*1-631-657-11	PC BOARD, LED		TM301	1-537-246-11 (US, Canadian, AE1, UK)...TERMINAL BOARD (SPEAKER)		C326 1-13
903	*1-631-654-11	PC BOARD, SELECTOR		TM301	1-537-246-21 (WG)...TERMINAL BOARD (SPEAKER)		C327 1-10
904	*1-631-870-11	PC BOARD, AC-SW		TM301	1-537-246-31 (AE2)...TERMINAL BOARD (SPEAKER)		C328 1-13

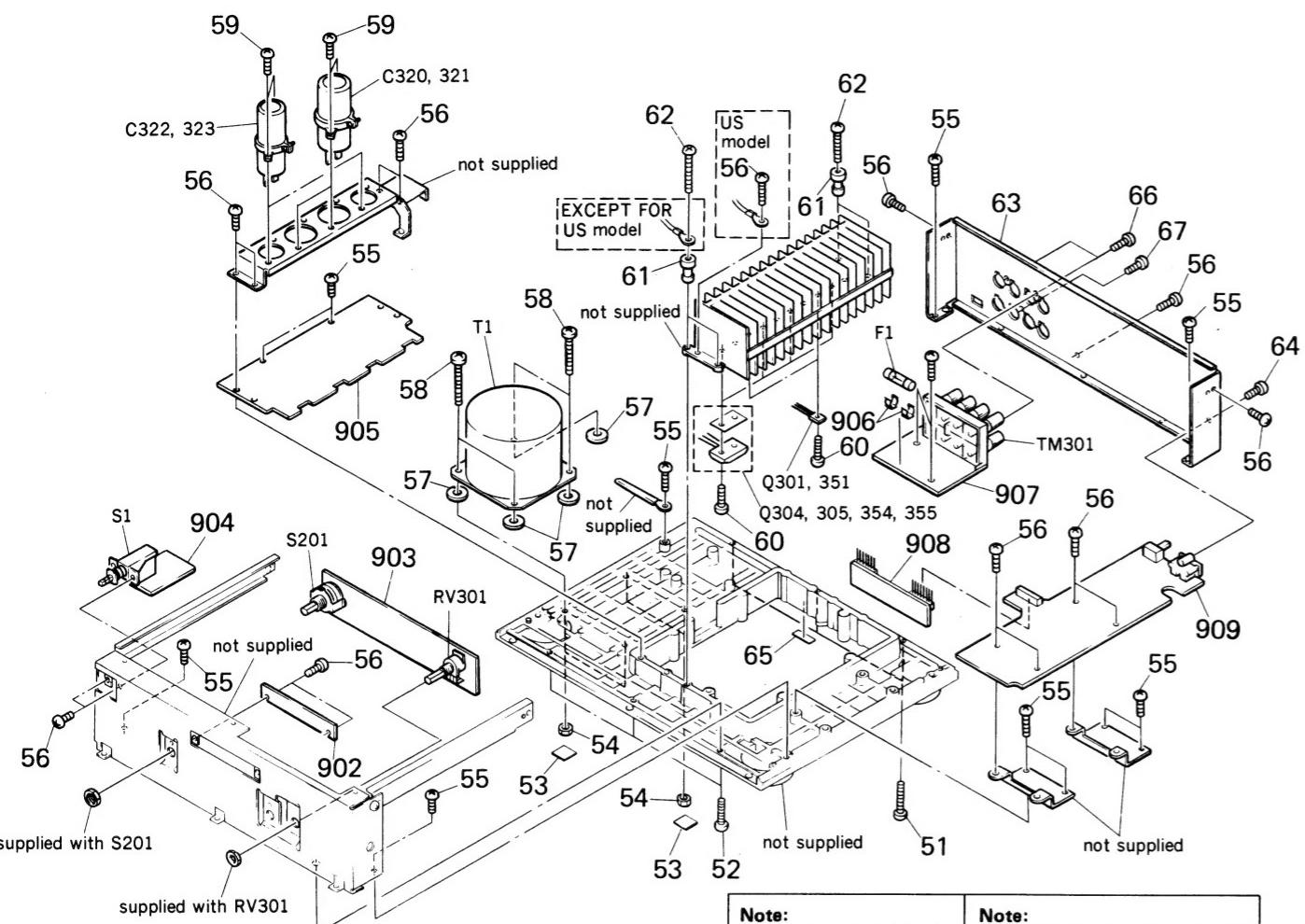
**NOTE:**  
• Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.

• Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• If there are such as circuit pack resistors

SECTION 5  
ELECTRICAL PARTS LIST

## 4-2. SHASSIS SECTION



Ref.No	Part No.	Description	Remark
51	7-685-876-09	SCREW +BVTT 3X16 (S)	
52	7-685-873-09	SCREW +BVTT 3X10 (S)	
53	*4-929-266-01	CUSHION	
54	7-684-024-04	N 4. TYPE 2	
55	7-685-647-79	SCREW +BVTP 3X10 TYPE2 SLIT	
56	7-682-547-09	SCREW +BVTT 3X6 (S)	
57	4-885-984-21	WASHER	
58	7-682-566-09	SCREW +B 4X20	
59	7-685-872-09	SCREW +BVTT 3X8 (S)	
60	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
61	4-933-025-01	(US)...COLLAR	
62	7-685-152-19	(US)...SCREW +P 3X25 TYPE2 SLIT	
62	7-685-647-79	(EXCEPT FOR US)...SCREW +BVTP 3X10 TYPE 2 SLIT	
63	*4-933-015-01	(EXCEPT FOR AE2)...PANEL, BACK	
63	*4-933-015-11	(AE2)...PANEL, BACK	
64	7-621-849-00	SCREW, TAPPING	
65	*4-703-079-21	(UK)...LABEL, CAUTION (BACK)	
66	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
67	7-621-849-00	(WG)...SCREW, TAPPING	
67	7-685-647-79	(EXCEPT FOR WG)...SCREW +BVTP 3X10 TYPE 2 N-S	
902	*1-631-657-11	PC BOARD, LED	
903	*1-631-654-11	PC BOARD, SELECTOR	
904	*1-631-870-11	PC BOARD, AC-SW	

**Note:**  
The components identified by mark **▲** or dotted line with mark **▲** are critical for safety.  
Replace only with part number specified.

## NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked “★” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:  
MF:  $\mu$ F, PF:  $\mu\mu$ F.RESISTORS:  
• All resistors are in ohms.

## • F: nonflammable

## COILS

• MMH: mH, UH:  $\mu$ H

## SEMICONDUCTORS

In each case, U:  $\mu$ , for example:  
UA...:  $\mu$ A..., UPA...:  $\mu$ PA...,  
UPC...:  $\mu$ PC, UPD...:  $\mu$ PD...

The components identified by mark **▲** or dotted line with mark **▲** are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque **▲** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

WG: West Germany

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
901	▲ 1-557-577-11	(US, Canadian)...CORD, POWER		C329	1-104-278-91	POLYSTYRENE	100PF 5% 50V
901	▲ 1-574-804-11	(UK)...CORD, POWER		C330	1-161-370-00	(WG)...CERAMIC	0.01MF 30% 25V
901	▲ 1-574-805-11	(AEP, WG)...CORD, POWER		C351	1-104-276-11	POLYSTYRENE	68PF 10% 50V
902	*1-631-657-11	PC BOARD, LED		C352	1-124-915-11	ELECT	10MF 20% 63V
903	*1-631-654-11	PC BOARD, SELECTOR		C353	1-104-276-11	POLYSTYRENE	68PF 10% 50V
904	*1-631-870-11	PC BOARD, AC-SW		C354	1-124-130-00	ELECT	100MF 20% 63V
905	*A-4333-769-A	(US)...MOUNTED PCB, MAIN (B)		C355	1-107-276-11	MICA	3PF 0.5PF 500V
905	*A-4333-770-A	(Canadian)...MOUNTED PCB, MAIN (B)		C358	1-107-206-00	MICA	15PF 5% 500V
905	*A-4333-771-A	(WG)...MOUNTED PCB, MAIN (B)		C359	1-124-929-11	ELECT	22MF 20% 63V
905	*A-4333-772-A	(UK)...MOUNTED PCB, MAIN (B)		C360	1-107-159-00	MICA	33PF 5% 500V
905	*A-4333-783-A	(AEP)...MOUNTED PCB, MAIN (B)		C361	1-107-159-00	MICA	33PF 5% 500V
906	*1-533-183-11	(AEP, UK, WG)...HOLDER, FUSE		C362	1-136-161-00	FILM	0.047MF 5% 50V
906	*1-533-185-11	(US, Canadian)...HOLDER, FUSE		C375	1-136-161-00	FILM	0.047MF 5% 50V
907	*1-631-658-11	PC BOARD, SP.TM		C376	1-130-471-00	(WG)...FILM	0.001MF 5% 50V
908	*1-631-656-11	PC BOARD, JUMPER		C377	1-109-621-00	(WG)...MICA	220PF 5% 500V
909	*1-631-655-11	PC BOARD, (A) CLASS		C378	1-130-471-00	(WG)...FILM	0.001MF 5% 50V
				C379	1-104-278-91	POLYSTYRENE	100PF 5% 50V
				C408	1-124-918-11	(US)...ELECT	47MF 20% 63V
				C408	1-123-377-00	(EXCEPT FOR US)...ELECT	470MF 20% 63V
				C409	1-124-918-11	(US)...ELECT	47MF 20% 63V
				C409	1-123-377-00	(EXCEPT FOR US)...ELECT	470MF 20% 63V
				C410	1-124-918-11	(US)...ELECT	47MF 20% 63V
				C410	1-123-377-00	(EXCEPT FOR US)...ELECT	470MF 20% 63V
				C411	1-124-918-11	(US)...ELECT	47MF 20% 63V
				C411	1-123-377-00	(EXCEPT FOR US)...ELECT	470MF 20% 63V
				C501	▲ 1-161-741-00	CERAMIC	0.001MF 10% 400V
				CNJ8	*1-563-381-11	SOCKET, CONNECTOR 11P	
				CNJ10	*1-563-381-11	SOCKET, CONNECTOR 11P	
				CNP2	*1-565-792-11	PIN, CONNECTOR 2P	
				CNP3	*1-564-321-00	PIN, CONNECTOR 2P	
				CNP4	*1-564-241-00	PIN, CONNECTOR 4P	
				CNP5	*1-564-241-00	PIN, CONNECTOR 4P	
				CNP8	1-568-203-11	PIN, CONNECTOR (PC BOARD) 11P	
				CNP10	1-568-203-11	PIN, CONNECTOR (PC BOARD) 11P	
				D201	8-719-912-20	DIODE ISS120	
				D202	8-719-912-20	DIODE ISS120	
				D203	8-719-303-00	DIODE SEL2510C	
				D204	8-719-303-00	DIODE SEL2510C	
				D205	8-719-301-39	DIODE SEL2210S	
				D206	8-719-912-20	DIODE ISS120	
				D207	8-719-912-20	DIODE ISS120	
				D301	8-719-230-02	DIODE 3DF2	
				D302	8-719-230-02	DIODE 3DF2	
				D303	8-719-230-02	DIODE 3DF2	
				D304	8-719-230-02	DIODE 3DF2	
				D305	8-719-200-77	DIODE 10E2N	
				D306	8-719-200-77	DIODE 10E2N	
				D307	8-719-200-77	DIODE 10E2N	
				D308	8-719-200-77	DIODE 10E2N	

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>
D309	8-719-200-77	DIODE 10E2N	R223	1-249-465-11	CARBON 47K 5% 1/4W
D310	8-719-200-77	DIODE 10E2N	R224	1-247-721-11	CARBON 4.7K 5% 1/4W
D311	8-719-200-77	DIODE 10E2N	R225	1-247-744-11	CARBON 270 5% 1/2W
D312	8-719-912-20	DIODE 1SS120	R227	1-247-747-11	CARBON 470 5% 1/2W
D313	8-719-912-20	DIODE 1SS120	R228	1-247-747-11	CARBON 470 5% 1/2W
D314	8-719-912-20	DIODE 1SS120	R229	1-247-703-11	CARBON 180 5% 1/4W
D362	8-719-912-20	DIODE 1SS120	R230	1-247-747-11	CARBON 470 5% 1/2W
D363	8-719-912-20	DIODE 1SS120	R231	1-247-747-11	CARBON 470 5% 1/2W
D364	8-719-912-20	DIODE 1SS120	R232	1-247-725-11	CARBON 10K 5% 1/4W
EH1	*1-564-507-11	PLUG, CONNECTOR 4P	R301	1-247-713-11	CARBON 1K 5% 1/4W
EH2	*1-564-506-11	PLUG, CONNECTOR 3P	R302	1-249-599-11	CARBON 91K 5% 1/4W
EH3	*1-564-507-11	PLUG, CONNECTOR 4P	R303	1-249-797-11	CARBON 620 1% 1/2W
EH4	*1-564-506-11	PLUG, CONNECTOR 3P	R304	△ 1-247-713-11	CARBON 1K 5% 1/4W F
EH5	*1-564-506-11	PLUG, CONNECTOR 3P	R305	△ 1-247-707-11	CARBON 390 5% 1/4W F
EH6	*1-564-508-11	PLUG, CONNECTOR 5P	R306	△ 1-219-030-11	FUSIBLE 220 5% 1/2W
F1	△ 1-532-350-00	(AEP, UK, WG)....FUSE, TIME-LAG T4A	R307	△ 1-217-989-11	FUSIBLE 4.7 5% 1/2W
F1	△ 1-532-510-00	(US, Canadian)....FUSE, GLASS TUBE 8A	R308	△ 1-217-989-11	FUSIBLE 4.7 5% 1/2W
IC101	8-759-602-83	IC M5238P	R309	1-217-611-00	METAL PLATE 0.1 1W
IC102	8-759-604-39	IC M5F78M12	R310	1-217-611-00	METAL PLATE 0.1 1W
IC103	8-759-604-45	IC M5F79M12	R311	△ 1-247-717-11	CARBON 2.2K 5% 1/4W F
IC301	8-749-920-70	IC STK3102-3	R312	1-249-460-11	CARBON 15K 5% 1/4W
IC302	8-759-111-68	IC UPC1237HA	R313	△ 1-219-002-11	FUSIBLE 15 5% 1/2W
L301	*1-420-872-00	COIL, AIR CORE	R314	△ 1-219-002-11	FUSIBLE 15 5% 1/2W
L351	*1-420-872-00	COIL, AIR CORE	R315	1-247-891-00	CARBON 330K 5% 1/4W
PJ101	1-568-250-11	JACK, PIN 2P (INPUT MONO)	R316	1-247-725-11	CARBON 10K 5% 1/4W
PTH301	1-202-850-00	(US)....THERMISTOR (POSITIVE)	R317	1-247-887-00	CARBON 220K 5% 1/4W
PTH303	1-202-850-00	(US)....THERMISTOR (POSITIVE)	R318	1-247-885-00	CARBON 180K 5% 1/4W
PTH351	1-202-850-00	(US)....THERMISTOR (POSITIVE)	R319	1-249-461-11	CARBON 18K 5% 1/4W
Q201	8-729-140-96	TRANSISTOR 2SD774-34	R320	1-247-721-11	CARBON 4.7K 5% 1/4W
Q202	8-729-194-57	TRANSISTOR 2SC945-P	R321	1-249-462-11	CARBON 22K 5% 1/4W
Q203	8-729-119-76	TRANSISTOR 2SA1175-HFE	R323	△ 1-212-849-00	FUSIBLE 4.7 5% 1/4W F
Q204	8-729-119-76	TRANSISTOR 2SA1175-HFE	R324	1-247-727-11	CARBON 10 5% 1/2W
Q301	8-729-203-45	TRANSISTOR 2SC3423-O	R326	1-249-850-11	CARBON 100K 1% 1/2W
Q302	8-729-127-53	TRANSISTOR 2SC2275-P	R327	1-247-708-11	CARBON 470 5% 1/4W
Q303	8-729-190-53	TRANSISTOR 2SA985A-P	R330	1-247-727-11	(WG)....CARBON 10 5% 1/2W
Q304	8-729-320-03	TRANSISTOR 2SC2921M-O	R331	1-247-727-11	(WG)....CARBON 10 5% 1/2W
Q305	8-729-320-01	TRANSISTOR 2SA1215M-O	R351	1-247-713-11	CARBON 1K 5% 1/4W
Q306	8-729-204-91	TRANSISTOR 2SA1049	R352	1-249-599-11	CARBON 91K 5% 1/4W
Q351	8-729-203-45	TRANSISTOR 2SC3423-O	R353	1-249-797-11	CARBON 620 1% 1/2W
Q352	8-729-127-53	TRANSISTOR 2SC2275-P	R354	△ 1-247-713-11	CARBON 1K 5% 1/4W F
Q353	8-729-190-53	TRANSISTOR 2SA985A-P	R355	△ 1-247-707-11	CARBON 390 5% 1/4W F
Q354	8-729-320-03	TRANSISTOR 2SC2921M-O	R356	△ 1-219-030-11	FUSIBLE 220 5% 1/2W
Q355	8-729-320-01	TRANSISTOR 2SA1215M-O	R357	△ 1-217-989-11	FUSIBLE 4.7 5% 1/2W
Q356	8-729-204-91	TRANSISTOR 2SA1049	R358	△ 1-217-989-11	FUSIBLE 4.7 5% 1/2W
<u>RESISTOR</u>					
R101	1-247-713-11	(WG)....CARBON 1K	R359	1-217-611-00	METAL PLATE 0.1 1W
R102	1-247-713-11	CARBON 1K	R360	1-217-611-00	METAL PLATE 0.1 1W
R103	1-247-725-11	CARBON 10K	R361	△ 1-247-717-11	CARBON 2.2K 5% 1/4W F
R104	1-249-583-11	CARBON 20K	R362	1-249-460-11	CARBON 15K 5% 1/4W
R105	1-247-704-11	CARBON 220	R363	△ 1-219-002-11	FUSIBLE 15 5% 1/2W
R106	1-249-469-11	CARBON 100K	R364	△ 1-219-002-11	FUSIBLE 15 5% 1/2W
R107	1-247-725-11	CARBON 10K	R365	1-247-887-00	CARBON 220K 5% 1/4W
R151	1-247-713-11	(WG)....CARBON 1K	R374	1-247-727-11	CARBON 10 5% 1/2W
R214	1-247-693-11	CARBON 27	R376	1-249-850-11	CARBON 100K 1% 1/2W
R215	1-247-229-00	CARBON 360	R377	1-247-708-11	CARBON 470 5% 1/4W
R216	1-247-229-00	CARBON 360	R380	1-247-727-11	(WG)....CARBON 10 5% 1/2W
R217	1-247-237-00	CARBON 750	R381	1-247-727-11	(WG)....CARBON 10 5% 1/2W
R218	1-249-462-11	CARBON 22K	R401	△ 1-215-920-11	METAL OXIDE 3.3K 5% 3W F
R219	1-249-465-11	CARBON 47K	R402	△ 1-215-920-11	METAL OXIDE 3.3K 5% 3W F
R221	1-247-717-11	CARBON 2.2K	RT301	1-237-455-11	RES. ADJ. CARBON 500
R222	1-247-237-00	CARBON 750	RT351	1-237-455-11	RES. ADJ. CARBON 500
			RV301	1-238-656-11	RES. VAR. CARBON 20K/20K (ATTENUATOR)
			RY301	1-515-676-11	RELAY
			RY302	1-515-676-11	RELAY

<b>Note:</b> The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	<b>Note:</b> Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
S1	△.1-554-538-00	SWITCH, PUSH (AC POWER)(1 KEY)	
S101	1-572-010-11	SWITCH, SLIDE (INPUT OPERATION)	
S201	1-572-008-11	SWITCH, ROTARY (SPEAKERS)	
T1	△.1-449-787-11	(AEP, WG)....TRANSFORMER, POWER	
T1	△.1-449-789-11	(UK)....TRANSFORMER, POWER	
T1	△.1-449-790-11	(US, Canadian)....TRANSFORMER, POWER	
TM301	1-537-246-11	(US, Canadian, AE1, UK)....TERMINAL BOARD (SPEAKER)	
TM301	1-537-246-21	(WG)....TERMINAL BOARD (SPEAKER)	
TM301	1-537-246-31	(AE2)....TERMINAL BOARD (SPEAKER)	

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
ACCESORIES AND PACKING MATERIALS			*****
*2-135-414-01		(EXCEPT FOR UK)....SHEET, PROTECTION	
3-703-450-01		(US)....INSTRUCTION	
3-750-794-11		(US, Canadian, AE1, UK)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)	
3-750-794-41		(AE2, WG)....MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)	
4-847-802-00		SCREW	
*4-933-001-01		CUSHION	
4-933-004-01		INDIVIDUAL CARTON	

**Note:**  
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

**Note:**  
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Audio Group

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